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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,788	08/19/2003	Liu Liang Liao	MR2349-957	3716
4586	7590	12/14/2004	EXAMINER	
ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043			FINEMAN, LEE A	
			ART UNIT	PAPER NUMBER
			2872	
DATE MAILED: 12/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/642,788	Applicant(s) LIAO, LIU LIANG	
	Examiner Lee Fineman	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "81" (fig. 8). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loucks, U.S. Patent No. 5,073,830 in view of Yoshida, U.S. Patent No. 5,805,33.

Regarding claims 1-4 and 6-12, Loucks discloses a system and method in fig. 1 including a polarization conversion module used in a projection system (column 3, lines 22-24) to convert an incident light (10) into polarized light (15 and 17), the polarization conversion module comprising a convex lens (12) used to receive and parallel the incident light passing therethrough (column 2, lines 10-11); a polarization beam splitter (14), which is a polarization beam splitting prism (column 2, lines 24-25), for receiving and polarizing the paralleled incident light transmitted from the convex lens (fig. 1), wherein the polarization beam splitter splits the paralleled incident light into two parts (15, 17), one part (15) penetrating through the polarization beam splitter and another part (17) being reflected by the polarization beam splitter; a phase transformation device (18), which is a half wave plate, for receiving polarized light (17) and transforming the phase of the polarized light therethrough, thereby generating phase-shifted polarized light (column 2, line 66-column 3, line 5); a mirror (16) for reflecting the reflected polarized light (17) from the polarization beam splitter (14); and a focusing lens (20) for receiving the phase-shifted light and the polarized light and projecting the received light onto a predetermined zone (22). Loucks discloses the claimed invention except for the phase transformation device transforming the phase of the polarized light passing through the beam splitter versus the reflected polarized light. It is very well known in the art to use phase transformation device to transform the phase of either reflected or transmitted light to achieve a specific polarization. For example, Yoshida teaches in fig. 5 wherein the transmitted light from polarizing beam splitter (12) is converted to a different polarization by a phase transformation device/half wave plate (13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the phase transformation device to transform the phase of

Art Unit: 2872

the polarized light passing through the beam splitter instead of the reflected light to achieve a different specific polarization for use with elements requiring that polarization. The method of utilizing the structure of the claim is inherent therein.

Regarding claim 5, Loucks in view of Yoshida disclose the claimed invention except for the polarization beam splitter being a polarization beam splitter plate. Official Notice is taken of the equivalency of polarization beam splitter prisms and polarization beam splitter plate in the projector art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a polarization beam splitter plate in the system instead of a prism to provide a more compact device.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tsuji et al., U.S. Patent No. 5,461,500; Baur et al., U.S. Patent No. 5,115,305; and Mitsutake et al., U.S. Patent No. 5,446,510 disclose various polarization conversion modules.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAF

December 6, 2004



MARK A. ROBINSON
PRIMARY EXAMINER